

Appendix D

1200-5-1-.34 WELLHEAD PROTECTION (Effective 1-5-94)

(1) General Requirements

- (a) The requirements of Rule 1200-5-1-.34 constitute Wellhead Protection Regulations. These regulations establish a statewide program for development and implementation of wellhead protection plans by public water systems (PWS), and are intended to protect aquifers used as potable water supply sources from contamination due to hazardous and/or toxic substances entering the ground water. PWS which purchase all of their water from other regulated systems are not subject to the provisions of this rule.
- (b) A PWS using a ground source shall prepare a Wellhead Protection Plan which determines a wellhead protection area and identifies all potential anthropogenic sources of contaminants which may have any adverse effect on the health of persons and potential contaminant sources within the area. Each PWS must implement the approved Wellhead Protection Plan and a Wellhead Protection Program. The plan shall be submitted for approval by the Department and be available for inspection during subsequent sanitary surveys or other inspections.
- (c) The requirements specified in this rule shall be considered minimum requirements and shall not prevent the PWS from taking additional steps as desired to protect its wells, springs or wellfields.
- (d) Terms not specifically defined in this rule shall be as defined in the Tennessee Safe Drinking Act (T.C.A. 68-13-701 et seq.) and the Tennessee Water Quality Control Act (T.C.A. 69-3-101 et seq.). For purposes of this rule, the following terms are defined as follows:
 1. "Aquifer" means a geologic formation, portion thereof, or group of formations (including overlying unconsolidated material) which contains and is capable of yielding a sufficient quantity of ground water to serve as a domestic or public water supply or other use.
 2. "Confined Aquifer" means an aquifer bounded above and below by layers of geologic material with sufficiently low hydraulic conductivity to hamper movement of water into and out of the aquifer.
 3. "Ground Water" means any waters of the State as defined in T.C.A. 69-3-103 (Tennessee Water Quality Control Act), occurring below the surface of the ground not contained by artificial barriers.
 4. "Leaky Confined Aquifer" means a confined aquifer whose bounding layer of geologic material of lower hydraulic conductivity is sufficiently permeable to transmit water from the overlying unconfined aquifer into the semi-confined (leaky) aquifer.
 5. "Karst" means limestone, shaley limestone, dolomite, and/or shaley dolomite rock terrain characterized by highly directional ground water flow in discrete channels or conduits in the form of solutionally enlarged fractures, faults and/or bedding planes. It is not required for karst surface features to be present in the form of sinkholes, disappearing streams, caves and springs for the karst definition to be applicable. This definition includes both conduit flow conditions

and flow conditions through microfractures and along bedding planes. Areas of the State of Tennessee which are considered to meet this definition are further identified in Figure 1.

6. "Wellhead Protection Area" means the surface and subsurface area surrounding a waterwell, wellfield or spring supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well, wellfield or spring.
- (e) Each PWS will implement their Wellhead Protection Plan within the time set forth in Table 1200-5-1-.34(1)(g)(2) following the publication and distribution of a guidance document by the Department. Each PWS is designated per size in categories as set forth in Table 1200-5-1-.34(e)(1), below. Size categories are determined by the number of connections and the amount of water produced. The designation of Public Water Supply categories for purposes of Rule 12-5-1-.34 are as follows:

TABLE 1200-5-1-.34(1)(e)1
PUBLIC WATER SYSTEM CATEGORIES

CATEGORY 1:	(a)	Community PWS with less than 100 connections and less than 20,000 gallons per day (gpd) average daily production
	(b)	All Noncommunity PWS
CATEGORY 2:	(a)	Community PWS with 100 to 999 connections and less than 315,000 gpd average daily production.
	(b)	Community PWS with less than 100 connections and 20,000 to 314,999 gpd average daily production.
CATEGORY 3:	(a)	Community PWS with 1000 to 2999 connections and less than 1,000,000 gpd average daily production.
	(b)	Community PWS with less than 1000 connections and 315,000 to 999,999 gpd average daily production.
CATEGORY 4:	(a)	Community PWS with 3,000 or more connections.
	(b)	Community PWS with less than 3,000 connections and 1,000,000 gpd or greater average daily production.

- (f) Each PWS using a ground water source shall perform the following tasks, in accordance with their size category as further set forth in 1200-5-1-.34(2) and in published guidance.
1. Each PWS shall take photographs and perform field measurements, pursuant to the appropriate size category, in the delineation of their wellhead protection area (Zones 1 and 2 below).

2. Each PWS shall designate two zones of protection for their ground water source:
 - (i) "Wellhead Protection Zone" (Zone 1) -- the zone adjacent to the well or spring where the PWS well or spring actively draws the water which supplies the well or spring, where contamination could enter the aquifer alongside the well casing or be drawn into the cone of depression of the well. The distance for this zone shall be a fixed radius set forth in part 3 of this rule. This zone may be later modified by Departmental approval to reflect hydrogeologic conditions using the same methods acceptable for the Wellhead Management Zone below. Zone 1 requires the highest level of protection.
 - (ii) "Wellhead Management Zone" (Zone 2) -- the zone surrounding the Wellhead Protection Zone which is delineated on the basis of ground water flow direction and recharge, where contamination is reasonably likely to move toward and reach the well or spring. However, the Wellhead Management Zone for Category 1 systems shall be a fixed radius of 750 feet.
3. The Wellhead Protection Zone (Zone 1) shall be designated as the following radius:
 - (i) Category 1: 250 feet
 - (ii) Category 2: 500 feet
 - (iii) Category 3: 750 feet
 - (iv) Category 4: 750 feet
4. The Wellhead Management Zone (Zone 2) for Category 1 systems shall be designated as the area encompassed from the 250 foot radius (Zone 1) to a 750 foot radius. For PWS Categories 2 through 4, Zone 2 shall be as set forth in Rule 1200-5-1-.34(2).
5. Each PWS shall notify the governing county body and county/regional planning commission of the designation of the Zones in Rule 1200-5-1-.34(1)(f)3. & 4., per the Tennessee Safe Drinking Water Act, T.C.A. 68-221-701 et seq. within four (4) months of the effective date of this rule. For Category 1 PWS this shall include both Zone 1 and Zone 2, followed by a copy of the Wellhead Protection Plan upon the Plan's completion. For Categories 2, 3 and 4, the initial notification shall only apply to Zone 1. These systems shall also later deliver these bodies a copy of the final Wellhead Protection Plan specifying both zones. The PWS shall describe the concept of Wellhead Protection and Wellhead Management Zones and provide a topographic map or other suitable map of a scale of 1:24000 (1 inch = 2000 feet) or better with the designated area marked.

The PWS shall also provide a statement of the intent to pursue a Wellhead Protection Program, soliciting the governing body and planning commission's cooperation.

6. Each PWS shall perform a Potential Contaminant Source Inventory within its designated Wellhead Protection and Wellhead Management Zones to identify all potential contaminant sources located within those zones. For the purposes of this rule, a potential contaminant source shall be defined as any facility, structure, enterprise, function or activity occurring or present within a wellhead protection or management zone which may, as a result of either the normal or abnormal operation thereof, release to the ground waters any pollutant, material or contaminant substance as defined in T.C.A. 69-3-101 et seq. (Tennessee Water Quality Control Act). Examples of land uses and activities which are considered to be potential contaminant sources will be further described in the guidance document to be published by the Department. The potential contaminant source inventory must be submitted to the Department by the time set forth in Table 1200-5-1-.34(1)(g)2.
7. Each PWS shall submit a Wellhead Protection Plan for Department approval. Plans shall consider hazardous chemical use, storage, spill response notification and contingency planning. In addition, plans shall include public education and participation, proposed local ordinances, proposed zoning changes and other institutional controls. The Plans shall also include provisions for periodic updating. The PWS shall implement the Wellhead Protection Plan as set forth in part (g) of this rule.
8. As the Wellhead Protection Plan is implemented, the PWS shall document any land management strategies available to it which have been employed. Documents may include, but are not limited to the following: ordinances, codes, permits, memoranda of understanding, and public education programs.
9. A PWS may apply to the State for an extension of the time frame to submit the wellhead protection plan to the State. The request must be in writing and set forth the basis for the request. A system must provide the following information and data to the Department with a request for an extension:
 - (i) number of wells;
 - (ii) size of the wellfield;
 - (iii) size of zone 1 and zone 2;
 - (iv) technical data;
 - (v) steps and procedures the PWS has implemented to achieve compliance with these rules; and
 - (vi) any other information required by the State.
10. The Department shall determine whether to grant an extension of this requirement. The Department shall consider the following factors in its determination:
 - (i) technical determination of the zone areas; and

- (ii) the activities the PWS has implemented to achieve compliance with these rules.
11. The Department shall either grant or deny a request for an extension of the timeframe to submit the wellhead protection plan. The term of the extension shall be set by the Department, however, the term of the extension shall not exceed three (3) years. A system may request, in writing, that the extension be continued for an additional three (3) years upon good cause shown. The Department shall review and, where appropriate, revise its determination when relevant data or information becomes available.
 12. PWS which do not comply with Rule 1200-5-1-.34 in the development of a Wellhead Protection Plan shall not be eligible for waivers from monitoring requirements for chemicals for which MCL's have been established as set forth in Rule 1200-5-1-.09 and 1200-5-1-.10.
 13. A change within the Wellhead Protection area will require an updated Plan. A significant increase in average daily production rates (greater than 25%) and significant new potential contamination sources shall require alteration of the Plan. For purposes of this rule, a significant potential contamination source is defined as any facility, structure, enterprise, function or activity occurring or present within a wellhead protection or management zone which due to an activity or the release of contaminant substances resulting from the normal or abnormal operation of such activity, may present an immediate or increased risk of contamination of the ground waters supplying a spring, well, or wellfield. Updates regarding potential contaminant source inventories shall be performed at least every three years or when significant new potential sources are discovered. The revisions should address any changes in the hydrogeology, delineation of the protection areas, potential contamination sources, and land management strategies. The Department may request an update to the Plan due to change in

hydrogeologic conditions (including increased pumping rates) or changes in potential contamination sources which may increase the risk of contamination of the PWS.
 14. The PWS shall comply with the terms set forth in 1200-5-1-.34(2), to delineate the Wellhead Management Zone. The Department must be notified prior to dye traces being run which may impact a public water system. A dye trace plan must be submitted to the Department for approval. The plan must include the date of the test, the duration of the test, the dye to be injected and any other information the Department requires for evaluation of the test. Dye trace results must also be submitted to the Department.
 15. The Wellhead Protection Plan shall include a procedure for notifying the Division of any condition which may impact the provisions of the wellhead protection plan or water supply. The PWS shall establish a procedure for notifying the owner or operator of any potential contaminant source which is believed to be discharging substances which may endanger the water supply of the PWS.

This notification shall cite the provisions of the Tennessee Safe Drinking Water Act and this rule, as well as any local ordinances which implement or support the wellhead protection plan. Such notification to the owner or operator shall also request the owner or operator to abate the activity or discharge. A copy of such notification shall be submitted to the Department.

- (g) A PWS must make the following submissions to the Department in the development of a Wellhead Protection Plan within the timeframe set forth below:

TABLE 1200-5-1-.34(1)(g)2
IMPLEMENTATION SCHEDULE*

	Submit WHP Area <u>Proposal</u>	Submit Contaminant Source <u>Inventory</u>	Plan <u>Submittal</u>
Category 4:	Month 14	Month 22	Month 36
Category 3:	Month 12	Month 20	Month 34
Category 2:	Month 28**	Month 36	Month 42
Category 1: Community:		Month 12	Month 12
Noncommunity:		Month 18	Month 18

* Months indicated are months after guidance has been published and distributed

** Additional deadline for Category 2: field work completion by Month 16 for technical assistance in modeling Wellhead Protection area by Department

(2) Category-Specific Requirements

(a) Category 1 PWS

1. Photographs: Category 1 systems are required to provide clear photographs of the spring/wellhead and photographs taken North, Northeast, East, Southeast, South, Southwest, West and Northwest from the spring/well vantage point (facing outward from the spring or well). If the well or spring is enclosed in a building, the photographs shall be taken at a point as near as possible to the well/spring that allows a view of the surrounding property.
2. Area Delineation: The minimum Zone 1 area for Category 1 PWS shall be set as a 250 foot radius of the well or spring. The minimum Zone 2 area shall be set as the area from the 250 foot radius to a 750 foot radius of the well or spring. If in the Department determines these radii do not provide sufficient protection for a specific PWS, these zones may be enlarged or modified.

3. Contaminant Source Inventory: Category 1 PWS are required to perform a potential contaminant source inventory within Zones 1 and 2. These sources are to be indicated on a topographic map or other suitable map with a scale of 1:24000 (1 inch = 2000 feet) or better. The wellhead/spring and Zones 1 and 2 must be clearly marked, along with an inventory of sources in tabular form. Guidelines for performing a contaminant source inventory will be included in the published guidance.
4. Wellhead Protection Plan: The Plan to be provided by Category 1 PWS shall consist of the required photographs, Zone 1 and 2 marked on the topographic map, the contaminant source inventory, and the steps the PWS is taking to protect the area within Zone 1. The steps must include plans for hazardous chemical storage on the property, hazardous chemical use within Zone 1, plans for spill response and may include posting as a wellhead protection area in the immediate vicinity of the well or spring. Other provisions may also be included. Two copies of the Plan shall be provided to the Division of Water Supply.
5. Wellhead Protection Program: Once the Wellhead Protection Plan has been approved by the Department, the PWS shall notify the governing county body and county/regional planning commission that a Wellhead Protection Program is in place and deliver copies of the Plan to such bodies. The PWS shall then implement the Plan and document progress.

(b) Category 2 PWS

1. Field Measurements/Photographs: Category 2 systems are required to collect water level elevation data from area wells to determine local ground water flow directions, water table slope (hydrologic gradient) and local ground water recharge basins. Category 2 PWS's are also required to provide the same photographs specified for Category 1 in 1200-5-1-.34(2)(a)1.
2. Area Delineation: The minimum Zone 1 area for Category 2 shall be set as a 500 foot radius of the well or spring.
 - (i) For a PWS in counties west of the western extension of the Tennessee River, defined for purposes of this rule as West Tennessee (Figure 1); Zone 2 shall be set as the 10 year Time-of-Travel (TOT). This area shall be calculated with the Environmental Protection Agency's WHPA 2.0 Model, RESSQC Module using the mode which considers well interference. USGS MODFLOW shall be an acceptable alternative. Other modeling techniques must be approved in writing by the Department.

The PWS may perform the modeling of the Wellhead Protection area or may deliver the necessary information to the Department for the modeling of the wellhead protection area. The PWS shall use the generated model to determine the Wellhead Management Zone (Zone 2).

- (ii) For Category 2 PWS in West Tennessee (Figure 1) using aquifers under confined conditions, the PWS's may use the leaky aquifer scenario in the GPTRAC or Monte Carlo module of WHPA 2.0 or the MODFLOW leaky aquifer scenario. For purposes of this rule, all confined aquifers in West Tennessee shall be considered to be leaking.
- (iii) For Category 2 PWS east of the Tennessee River in karst and fractured rock areas (Figure 1), the collected hydrogeologic information shall be used to delineate the upgradient portion of the ground water recharge basin. The PWS may determine the upgradient portion of the recharge basin; or may deliver the information to the Department for assistance in delineating the basin. The delineated basin shall include direct recharge points to the aquifer such as sinkholes and stormwater runoff wells. All of Zone 1 shall be considered to lie within Zone 2.

3. Contaminant Source Inventory: Category 2 PWS are required to perform a potential contaminant source inventory within the Zones 1 and 2 as further specified in 1200-5-1-.34(2)(a)3. The Wellhead Protection Plan should establish procedures to eliminate or minimize the risk to the PWS from potential contamination sources.

4. Wellhead Protection Plan:

- (i) The Plan to be provided by Category 2 PWS shall consist of the required photographs, zones 1 and 2 marked on a topographic map, the contaminant source inventory and the steps the PWS is taking to protect/manage the wellhead protection area. The steps must include plans for hazardous chemical storage on the property, hazardous chemical use within Zones 1 and 2 and spill response notification in Zone 1. Other steps may be included such as proposed local ordinances. Two copies of the Plan shall be provided to the Division of Water Supply.
- (ii) The Plan shall also include procedures for reviewing, modifying, and updating the Plan.
- (iii) A PWS shall educate and notify the public of the wellhead protection program. A PWS shall submit in a daily newspaper of general circulation in the area served by the system, two (2) times per calendar year.

If the area served by the PWS is not served by a daily newspaper of general circulation, notice shall be given by circulation in a weekly newspaper of general circulation serving the area. Other methods of public education may also be used. The information provided to the local newspaper shall include, at a minimum:

- (I) the types of activities which may result in contamination of the ground water in the wellhead protection area;
- (II) the methods to protect the designated area;
- (III) a request for the public to report activities that may result in ground water contamination;
- (IV) the importance of ground water protection; and
- (V) a map of the designated wellhead protection area.

5. Wellhead Protection Program: Once the Wellhead Protection Plan has been approved by the Department, the PWS shall notify the governing county body and county/regional planning commission that a Wellhead Protection Program is in place and deliver copies of the Plan to such bodies. If the Wellhead Protection Zones cross county lines, that adjacent county must be notified. The PWS shall then implement the Plan and document progress. The PWS shall request that it be allowed to review and comment on land management issues in Zones 1 and 2 which may impact the ground water quality from all appropriate local governing bodies.

- (i) The PWS shall submit to the Division of Water Supply copies of the letters and other documentation to verify and document the compliance with part 5 of this rule.

(c) Category 3 PWS

(1) Field Measurements/Photographs: Category 3 systems are required to collect water level elevation data from area wells to determine local ground water flow directions, water table slope (hydrologic gradient) and local ground water recharge basins. This information shall be used by the PWS to generate a model of the wellhead protection area. Category 3 PWS are required to provide the same photographs as set forth for Category 1 in Rule 1200-5-1-.34(2)(a)1. In addition, Category 3 PWS are required to provide aerial photographs of the well/wellfield or spring for Zones 1 and 2.

2. Area Delineation: The minimum Wellhead Protection Zone for Category 3 shall be set as a 750 foot radius of the well or spring.

- (i) For PWS in counties west of the western extension of the Tennessee River defined for purposes of this rule as West Tennessee, the Wellhead Management Zone shall be set as the 10 year Time-of-Travel (TOT).

This area shall be calculated with the Environmental Protection Agency's WHPA 2.0 Model, RESSQC Module using the mode which considers well interference. MODFLOW shall be an acceptable alternative. Other modeling techniques must be approved in writing by the Department.

- (ii) For Category 3 PWS in West Tennessee (Figure 1) using aquifers under confined conditions, the PWS may use the leaky aquifer scenario in the GPTRAC or Monte Carlo module of WHPA 2.0 or the MODFLOW leaky aquifer scenario. For purposes of this rule, all confined aquifers in West Tennessee shall be considered to be leaking.
 - (iii) For closely spaced wells where zones overlap, the zones may be combined for a composite wellhead protection/management zone. The zone cannot be downgraded to lesser protection (Zone 1 areas override Zone 2 areas).
 - (iv) For Category 3 PWS east of the Tennessee River in karst and fractured rock areas (Figure 1), the collected hydrogeologic information shall be used to delineate the upgradient portion of the ground water recharge basin. The Wellhead Management Zone (Zone 2) shall describe the area (inclusive of the Wellhead Protection Zone) that takes in the recharge basin upgradient of the wellhead/spring. The Wellhead Protection Zone (Zone 1) shall include direct recharge points to the aquifer such as sinkholes and stormwater runoff wells. All of Zone 1 shall be considered to lie within Zone 2.
3. Contaminant Source Inventory: Category 3 PWS are required to perform a potential contaminant source inventory within the Wellhead Management (Zone 2) and Wellhead Protection Zones (Zone 1) as set forth in Rule 1200-5-1-.34(2)(a)3. The Wellhead Protection Plan should establish procedures to eliminate or minimize the risk to the PWS from potential contamination sources.
4. Wellhead Protection Plan:
- (i) The Plan to be provided by Category 3 PWS shall consist of the required photographs, Zones 1 and 2 marked on a topographic map, the contaminant source inventory, and the steps the PWS is taking to protect/manage the wellhead protection area. The steps must at least include plans for hazardous chemical storage on the property, hazardous chemical use within Zones 1 and 2, spill response notification in Zone 1 and proposed local ordinances in cooperation with the city or county government or county/ regional planning commission. Two copies of the Plan must be provided to the Division of Water Supply.

- (ii) The Plan shall also include procedures for reviewing, modifying, and updating the Plan.
- (iii) A PWS shall educate and notify the public of the wellhead protection program. A PWS shall submit in a daily newspaper of general circulation in the area served by the system, two (2) times per calendar year. If the area served by the PWS is not served by a daily newspaper of general circulation, notice shall be given by circulation in a weekly newspaper of general circulation serving the area. Other methods of public education may also be used. The information provided to the local newspaper shall include, at a minimum:
 - (I) the types of activities which may result in contamination of the ground water in the wellhead protection area;
 - (II) the methods to protect the designated area;
 - (III) a request for the public to report activities that may result in ground water contamination;
 - (IV) the importance of ground water protection; and
 - (V) a map of the designated wellhead protection area.

5. Wellhead Protection Program: Once the Wellhead Protection Plan has been approved by the Department, the PWS shall notify the governing county body and county/regional planning commission that a Wellhead Protection Program is in place and deliver copies of the Plan to such bodies. If the Wellhead Protection Zones cross county lines, that adjacent county must be notified. The PWS shall then implement the Plan and document progress. The PWS shall request that it be allowed to review and comment on land management issues in Zones 1 and 2 which may impact the ground water quality from all appropriate local governing bodies.

(d) Category 4 PWS

- (1) Field Measurements/Photographs: Category 4 systems are required to collect water level elevation data from area wells to determine local ground water flow directions, water table slope (hydrologic gradient) and local ground water recharge basins. Category 4 PWS are required to provide the same photographs as set forth for Category 1 in Rule 1200-5-1-.34(2)(a)1. In addition, Category 4 PWS are required to provide aerial photographs of the well/wellfield or spring for Zones 1 and 2.
- 2. Area Delineation: The minimum Zone 1 area for Category 4 PWS shall be set as a 750 foot radius of the well or spring.
 - (i) For PWS in counties west of the western extension of the Tennessee River, defined for purposes of this rule as West Tennessee (Figure 1), Zone 2 shall be set as the 10 year Time-of-Travel (TOT). This area shall be calculated with the

Environmental Protection Agency's WHPA 2.0 Model, RESSQC Module using the mode which considers well interference. MODFLOW shall be an acceptable alternative. Other modeling techniques must be approved in writing by the Department.

- (ii) For Category 4 PWS in West Tennessee using aquifers under confined conditions, the PWS's may use the leaky aquifer scenario in the GPTRAC or Monte Carlo module of WHPA 2.0 or the MODFLOW leaky aquifer scenario. For purposes of this rule, all confined aquifers in West Tennessee shall be considered to be leaking.
- (iii) For closely spaced wells where zones overlap, the zones may be combined for a composite wellhead protection/management zone. The zone cannot be downgraded to lesser protection (Zone 1 areas override Zone 2 areas).
- (iv) For Category 4 PWS east of the Tennessee River in karst and fractured rock areas (Figure 1), the collected hydrogeologic information shall be used to delineate the upgradient portion of the ground water recharge basin. The Wellhead Management Zone (Zone 2) shall describe the area (inclusive of the Wellhead Protection Zone) that takes in the recharge basin upgradient of the wellhead/spring. Zone 2 shall describe the area (inclusive of the Zone 1) that takes in the recharge basin upgradient of the wellhead/spring and shall include direct recharge points to the aquifer such as sinkholes and stormwater runoff wells. All of Zone 1 shall be considered to lie within Zone 2.
- (v) Category 4 PWS in karst and fractured rock with direct recharge points to the aquifer shall be required to hire a consultant with expertise in dye tracing to perform a dye trace by Department approved methods. Those areas demonstrated to be connected to the well or spring shall be considered Zone 1. The Department must be notified when a dye trace which may impact a PWS is to be performed. A dye trace plan must be submitted for approval to the Department for approval. The plan must include the date of the test, duration of the test, the dye to be injected and any other information the Department requires for evaluation of the test. Dye trace results must also be submitted to the Department.

3. Contaminant Source Inventory: Category 4 PWS are required to perform a potential contaminant source inventory within the Wellhead Management (Zone 2) and Wellhead Protection Zones (Zone 1) as set forth in Rule 1200-5-1-.34(2)(a)3. The plan should establish procedures to eliminate or minimize the risk to the PWS from potential contaminant sources.

4. Wellhead Protection Plan:

- (i) The Plan to be provided by Category 4 PWS shall consist of the required photographs, Zones 1 and 2 marked on a topographic map, the contaminant source inventory, and the steps the PWS is taking to protect/manage the wellhead protection area. The steps must, at least, include plans for hazardous chemical storage on the property, hazardous chemical use within Zones 1 and 2, spill response notification in

Zone 1 and proposed local ordinances in cooperation with the city or county government or county/regional planning commission. Two copies of the Plan shall be provided to the Division of Water Supply.

- (ii) The Plan shall also include procedures for reviewing, modifying, and updating the Plan.

- (iii) A PWS shall educate and notify the public of the wellhead protection program. A PWS shall submit in a daily newspaper of general circulation in the area served by the system, two (2) times per calendar year. If the area served by the PWS is not served by a daily newspaper of general circulation, notice shall be given by circulation in a weekly newspaper of general circulation serving the area. Other methods of public education may also be used. The information provided to the local newspaper shall include, at a minimum:

- (I) the types of activities which may result in contamination of the ground water in the wellhead protection area;
- (II) the methods to protect the designated area;
- (III) a request for the public to report activities that may result in ground water contamination;
- (IV) the importance of ground water protection; and
- (V) a map of the designated wellhead protection area.

- 5. Wellhead Protection Program: Once the Wellhead Protection Plan has been approved by the Department, the PWS shall notify the governing county body and county/regional planning commission that a Wellhead Protection Program is in place and deliver copies of the Plan to such bodies. If the Wellhead Protection Zones cross county lines, that adjacent county must be notified. The PWS shall then implement the Plan and document progress. The PWS shall request that it be allowed to review and comment on land management issues in Zones 1 and 2 which may impact the ground water quality from all appropriate local governing bodies.

(3) Requirements for New Ground Water Sources

- (a) Prior to the construction of a new groundwater source after the effective date of these Rules, each PWS shall develop a Preliminary Evaluation Report (PER). The PWS shall submit the PER with the Engineering Plans and Specification to the Department for approval. After the new source is constructed, a Wellhead Protection Plan shall be developed pursuant to these rules. The PWS shall implement the Wellhead Protection Plan within eighteen (18) months of completion of construction of the new source.
- (b) A PWS shall consider potential contamination sources in determining the location of the new ground water source. The PER shall include a list of potential contamination sources within the potential Zone 1 area. Additionally, the PWS will work with appropriate local governing bodies to limit the future location of any potential contamination source or activity within Zone 1.
- (c) New PWS wells must receive site approval from the Division before drilling. New well approval is conditioned upon the PWS complying with all sections of the Wellhead Protection Regulation. Approval of new wells by the Division of Water Supply will depend on the ability of the PWS to provide the highest degree of reliable control of the area. The Division may deny its approval for new wells to be put into service if these requirements cannot be met.

(4) Contingency Plans

- (a) All PWS under this regulation must prepare a Contingency Plan to be submitted with the Wellhead Protection Plan. The contingency plan shall include at a minimum:
 - 1. A listing of all sources of drinking water currently available to the Public Water Supply;
 - 2. An estimate of the quantity of water available from currently connected sources;
 - 3. Identification of additional water supplies that will meet future needs;
 - 4. Identification of any actions that have been taken by local governments to protect designated future water supplies.
 - 5. References to the Wellhead Protection Plan that detail protection plans for designated future water supplies.
 - 6. A schedule for incorporation of designated future water supplies into the water system;
 - 7. An estimation of the resources (authority, consulting expenses, capital expenses) necessary to incorporate designated future water supplies into the water system by the schedule detailed in item 6;

8. Identification of the financial resources available to incorporate designated future water supplies into the water system.
 - (b) Reference made to the PWS's approved Emergency Plan will be sufficient for those items listed above which are addressed in the Emergency Plan.

Rulemaking Authority: T.C.A. Sections 68-221-704 and 4-5-202.

Substantive Authority: T.C.A. Sections 68-221-701 et seq.